

4. (Amended twice) The recombinant nucleic acid molecule of claim 6 wherein said nucleotide sequence encodes a fragment of at least 50 amino acids of NS4 or NS5.

516 6. (Amended twice) A recombinant nucleic acid molecule comprising a nucleotide sequence encoding hepatitis C virus NS4 or NS5 protein wherein said nucleotide sequence is operably linked to a promoter, enhancer, polyadenylation sequence, and optionally 5' UTR of hepatitis C virus.

11. (Amended twice) The pharmaceutical composition of claim 13 wherein said nucleotide sequence encodes a fusion protein encoding NS4 or NS5 or any combination thereof.

12. (Amended twice) The pharmaceutical composition of claim 13 wherein said nucleotide sequence encodes a fragment of at least 50 amino acids of NS4 or NS5.

526 13. (Amended twice) A pharmaceutical composition comprising:

a) a recombinant nucleic acid molecule comprising a nucleotide sequence encoding hepatitis C virus NS4 or NS5 protein, wherein said nucleotide sequence is operably linked to regulatory elements functional in human cells; and

b) a pharmaceutically acceptable carrier or diluent;

wherein said regulatory elements functional in human cells comprise a promoter, enhancer, polyadenylation sequence, and optionally 5' UTR of hepatitis C virus.

32. (Amended twice) A method of treating a human who is infected with hepatitis C virus comprising administering to said human a pharmaceutical composition in an amount effective to induce a therapeutic immune response against hepatitis C virus, wherein said composition comprises a recombinant nucleic acid molecule comprising a nucleotide sequence encoding a hepatitis C virus nonstructural protein, wherein said nucleotide sequence is operably linked to regulatory elements functional in human cells, and a pharmaceutically acceptable carrier or diluent, wherein said

regulatory elements functional in human cells comprise a promoter, enhancer, polyadenylation sequence, and optionally 5' UTR of hepatitis C virus.

34. (New claim) A recombinant nucleic acid molecule comprising a nucleotide sequence encoding a hepatitis C virus NS3 protein, wherein said nucleotide sequence is operably linked to a promoter, enhancer, polyadenylation sequence, and the entire 5' UTR of hepatitis C virus or a fragment thereof including the last nine nucleotides of the hepatitis C virus 5' UTR.

35. (New claim) The recombinant nucleic acid molecule of claim 34 wherein said nucleotide sequence encodes a fusion protein encoding NS3 or a combination of NS3 with NS4 or NS5, or a combination of NS3 with both NS4 and NS5.

36. (New claim) The recombinant nucleic acid molecule of claim 34 wherein said nucleotide sequence encodes a fragment of at least 50 amino acids of NS3.

37. (New claim) The recombinant nucleic acid molecule of claim 34 wherein said promoter is a cytomegalovirus promoter and said enhancer is a Rous Sarcoma Virus enhancer.

38. (New claim) A recombinant host cell comprising a nucleic acid molecule of claim 34.

39. (New claim) A pharmaceutical composition comprising:

a) a recombinant nucleic acid molecule comprising a nucleotide sequence encoding hepatitis C virus NS3 protein, wherein said nucleotide sequence is operably linked to regulatory elements functional in human cells; and

b) a pharmaceutically acceptable carrier or diluent;

wherein said regulatory elements functional in human cells comprise a promoter, enhancer, polyadenylation sequence, and the entire 5' UTR of hepatitis C virus or a fragment thereof including the last nine nucleotides of the hepatitis C virus 5' UTR.

40. (New claim) The pharmaceutical composition of claim 39 wherein said nucleotide sequence encodes a fusion protein encoding NS3 or a combination of NS3 with NS4 or NS5, or a combination of NS3 with both NS4 and NS5.

41. (New claim) The pharmaceutical composition of claim 39 wherein said nucleotide sequence encodes a fragment of at least 50 amino acids of NS3.

42. (New claim) The pharmaceutical composition of claim 39 wherein said promoter is a cytomegalovirus promoter and said enhancer is a Rous Sarcoma Virus enhancer.

43. (New claim) The pharmaceutical composition of claim 39 further comprising a facilitator.

44. (New claim) The pharmaceutical composition of claim 43 wherein said facilitator is bupivacaine.

Sub C⁴ 45. (New claim) A pharmaceutical composition comprising:

a) a recombinant nucleic acid molecule comprising a nucleotide sequence encoding a hepatitis C virus nonstructural protein, wherein said nucleotide sequence is operably linked to regulatory elements functional in human cells;

b) a pharmaceutically acceptable carrier or diluent; and

c) a facilitator;

wherein said regulatory elements functional in human cells comprise a promoter, enhancer, polyadenylation sequence, and optionally 5' UTR of hepatitis C virus.

46. (New claim) The pharmaceutical composition of claim 45 wherein said facilitator is bupivacaine.